

## ABSTRACT OF THE INVENTION

An economical digital voltage sag compensator for overcoming sags in distributed electrical power. The voltage sag compensator employs an inexpensive micro-controller, a full wave bridge rectifier, a DC power supply, a 5 voltage divider and an output switch. The micro-controller continuously monitors and evaluates, with respect to a setpoint measured in volt-seconds, the rectified DC voltage. At regularly spaced trigger events, as determined by the micro-controller, the micro-controller concurrently monitors the rectified DC voltage, evaluates the monitored voltage with respect to the setpoint, produces an output signal and sends that output signal to the output switch. 10 The output switch supplies an electrical device, connected electrically in series with the full wave bridge rectifier and the output switch, with a constant average current of sufficient level to maintain the electrical device in a desired operating condition. The constant average current is obtained by applying constant volt-seconds to the electrical device. The circuit also provides 15 overvoltage protection to the electrical device.